

## UPDATED INFORMATIVE DIGEST

### Sections Affected:

- I. Amendments to Title 13, California Code of Regulations (CCR), sections 1956.8 and 1960.1, and "California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" and "California Exhaust Emission Standards and Test Procedures for 1987 and Subsequent Model Heavy-Duty Otto-Cycle Engines and Vehicles," which are incorporated by reference therein.

Following a September 1990 public hearing, the Air Resources Board (ARB) adopted the California low-emission vehicle/clean fuel (LEV/CF) regulations. These regulations established four progressively more stringent categories of standards for passenger cars and light-duty trucks: Transitional Low-Emission Vehicles (TLEVs), Low-Emission Vehicles (LEVs), Ultra-Low-Emission Vehicles (ULEVs), and Zero-Emission Vehicles (ZEVs). The regulations also provided for the use of reactivity adjustment factors (RAFTs) to account for the varying reactivity of the exhaust of different vehicle/fuel combinations.

Prior to the present rulemaking, the Board had adopted RAFTs for TLEVs operating on M85 and TLEVs and LEVs operating on Phase 2 reformulated gasoline. In addition, the Board had adopted baseline specific reactivity values of 3.42 and 3.13 for TLEVs and LEVs/ULEVs, respectively. However, in the absence of production low-emission vehicles, staff had been unable to identify RAFTs for all vehicle and fuel categories. In this rulemaking the Board adopted a baseline specific reactivity of 3.13 for medium-duty LEVs and ULEVs and interim RAFTs through the 2000 model year for LEVs and ULEVs operating on Phase 2 reformulated gasoline, M85, compressed natural gas and liquefied petroleum gas. Within each fuel category, the RAFTs for LEVs and ULEVs are the same. These amendments will provide manufacturers with sufficient lead time to develop their product lines. The staff will continue to emission test low-emission production vehicles as they become available to determine whether future adjustments to the RAFTs are warranted to assure achievement of the ozone reduction goals of the regulations.

In this rulemaking the Board also adopted amendments to the low-emission standards and phase-in schedules for medium-duty vehicles (MDVs), designed to implement elements of the 1994 State Implementation Plan. The original LEV program included two more stringent emission categories of standards for MDVs--LEV and ULEV. Beginning with the 1998 model year, the regulations required manufacturers to produce increasing percentages of MDV LEVs and ULEVs, culminating in 85% LEVs and 15% ULEVs in 2003. The SIP submitted by the Board to U.S. EPA in November 1994 calls for substantial further reductions from this category through the accelerated introduction of ULEVs, culminating in a 100% ULEV requirement starting in the 2002 model year.

The adopted amendments represent an alternative MDV phase-in approach that will achieve emission reductions equivalent to the SIP provisions while minimizing disruption to

manufacturers' already established designs. For chassis-certified MDVs (approximately 70% of the MDV population, mostly pick-up trucks and sport utility vehicles), the amendments reduce the NOx standards for LEVs to ULEV levels and increase the minimum percentage of ULEVs from 15% to 40% in 2003. The Board relaxed the ULEV carbon monoxide (CO) standard for these vehicles to LEV levels in order to provide manufacturers more flexibility in developing NOx emission control strategies. For the remaining 30 percent of the MDVs certified under engine-dynamometer test procedures (large pick-up trucks, delivery vans, motor homes and small urban buses, weighing between 8501 and 14,000 pounds), all of the MDVs will have to meet the LEV standards in 2002-2003 and the ULEV standards starting with the 2004 model year. The LEV ROG + NOx standard is tightened for this category of MDVs starting with the 2002 model year, and the ULEV particulate, CO and formaldehyde standards are relaxed to the LEV levels. At the request of natural gas proponents, the Board established a new set of standards for "super" ULEVs. Although manufacturers are not required to produce any SULEVs, they have an incentive to do so to offset deficits created by harder to control engine families. In addition, the Board adopted more stringent NOx standards for 2004 and subsequent model-year medium-duty engine-dynamometer-certified vehicles and all heavy-duty Otto-cycle (generally gasoline) engines, tracking an Advance Notice of Proposed Rulemaking published by U.S. Environmental Protection Agency (U.S. EPA) in August 1995.

- II. Adoption of new section 2062, Title 13, CCR, and "California Assembly-Line Test Procedures for 1998 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," which is incorporated by reference therein. Amendments to Title 13, CCR, Section 1960.1 and "California Non-Methane Organic Gas Test Procedures," which is incorporated by reference therein; to Title 13, CCR, section 1965 and "California Motor Vehicle Emission Control and Smog Index Label Specifications," which is incorporated by reference therein; to Title 13, CCR, section 2061 and "California Assembly-Line Test Procedures for 1983 through 1997 Model-Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," which is incorporated by reference therein; to Title 13, CCR, section 2101 and "California New Vehicle Compliance Test Procedures," which is incorporated by reference therein; and to Title 13, CCR, section 2292.1

In addition to the MDV amendments and the adoption of new RAFs, in this rulemaking the Board adopted various other amendments to the LEV/CF regulations and the general certification requirements and procedures for light-duty vehicles. When the LEV/CF program was adopted in 1990 the Board instructed staff to periodically review the status of implementation of the regulations and incorporate updates and new information as needed to ensure the successful introduction of low-emission vehicles. As a result of the latest review of the regulations, the Board has now adopted a wide variety of amendments related to the certification and implementation of light- and medium-duty vehicles. Many of the amendments are very detailed and technical in nature. The more significant aspects are described below.

**California NMOG Test Procedures.** These test procedures prescribe the methods for the

calculation and measurement of non-methane organic gases. The adopted amendments reflect the development of improved measurement techniques and extensive discussions with automobile manufacturers. The amendments will provide additional flexibility for other laboratories to account for differing techniques and quality control procedures.

**California Assembly-Line Test Procedures.** The Assembly-Line Test Procedures ensure that the functional portions of the emission control system are operating correctly and that vehicles meet the emission standards to which they are certified prior to release of the vehicle by requiring the manufacturer to test a representative sample of the vehicles being produced. The amendments to these procedures clarify existing procedures and have been updated to reflect current regulations (e.g., on-board diagnostics regulations).

**California New Vehicle Compliance Test Procedure.** This test procedure covers ARB testing of vehicles before they are delivered to the ultimate purchaser. Amendments update the procedures which have not been amended since 1979. In addition, new provisions reflect new regulatory requirements (e.g., on-board diagnostics regulations).

**California Motor Vehicle Emission Control and Smog Index Label Specifications.** The primary purpose of these specifications is to require the vehicle's emission control equipment to be properly identified to ensure proper in-use maintenance. In this rulemaking the Board added a requirement that a smog index be included on the window label on passenger cars and lighter light-duty trucks, starting with the 1998 model year. The smog index will inform consumers of the relative contribution of that vehicle to ozone formation compared to other vehicles within the same vehicle class.

**Methanol Luminosity Requirement.** The M100 fuel specifications that were adopted in 1992 required the fuel to produce a luminous flame throughout the entire burn duration, since M100 has a virtually invisible flame in bright sunlight. The deadline for compliance for this requirement was January 1995, because at that time a suitable luminosity agent had not been identified. At a Board hearing in December 1994, the Board approved the use of fire suppression equipment in place of the luminosity requirement because a suitable luminosity agent had still not been identified. At that hearing, the Board instructed staff to conduct a risk assessment of M100 compared to gasoline or diesel and report back at the earliest possible time. The Board directed the staff to evaluate existing risk assessments and, if staff concluded that the relative fire safety of M100 as shown by the existing data justifies deletion of the luminosity requirement, staff should return to the Board with a proposal to remove the requirement. Based on available data, the staff concluded that the fire risk is much lower than that of gasoline or diesel. Accordingly, in this rulemaking the Board removed the luminosity requirement.

#### Comparison with Similar Federal Requirements

Under Title II of the federal Clean Air Act (CAA), the U.S. EPA has promulgated comprehensive

regulations to control emissions from new motor vehicles and motor vehicle engines (see 40 CFR Part 86). However, both state law and section 209 of the CAA allow California to establish its own standards that are different from the federal standards. While both the federal and California automotive exhaust emission standards are similar in purpose and scope, California standards are generally more stringent than comparable federal standards due to the severity of California's air pollution problem. Under CAA section 209(b)(3), compliance with applicable California standards is treated as compliance with the federal standards.

Except for the MDV amendments, most of the amendments in this rulemaking do not change the vehicle emission standards and are intended to simplify and clarify preexisting test procedure requirements. Where possible, staff had endeavored to be consistent with the federal requirements. Most of the test procedures being amended in this rulemaking are based in large part on the federal requirements set forth in 40 CFR Part 86, with some modifications to include California requirements. In addition, the amendments are designed to be consistent with the anticipated federal standards for medium-duty engines, beginning with the 2004 model year.